

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 05/18/2009

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Product name:** Magnesium perchlorate**Stock number:** 11636**CAS Number:**

10034-81-8

EINECS Number:

233-108-3

Relevant identified uses of the substance or mixture and uses advised against.**Sector of Use** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification**Classification of the substance or mixture**

GHS07

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.



O; Oxidizing

R8: Contact with combustible material may cause fire.

Label elements**Labelling according to EU guidelines:****Code letter and hazard designation of product:**

Xi Irritant

O Oxidizing

Risk phrases:

8 Contact with combustible material may cause fire.

36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:

17 Keep away from combustible material.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

37 Wear suitable gloves.

Hazard description:**WHMIS classification**

(Contd. on page 2)

USA

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 05/18/2009

Product name: Magnesium perchlorate

(Contd. of page 1)

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	0
REACTIVITY	3

Health (acute effects) = 2

Flammability = 0

Reactivity = 3

Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**3 Composition/information on ingredients****Chemical characterization: Substances****(CAS#) Description:**

magnesium perchlorate, anhydrous (CAS# 10034-81-8): 100%

Identification number(s):**EINECS Number:** 233-108-3**4 First aid measures****Description of first aid measures****General information** Immediately remove any clothing soiled by the product.**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.**5 Firefighting measures****Extinguishing media****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Metal oxide fume

Hydrogen chloride (HCl)

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Advice for firefighters**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

USA

(Contd. on page 3)

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 05/18/2009

Product name: Magnesium perchlorate

(Contd. of page 2)

7 Handling and storage**Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.

Conditions for safe storage, including any incompatibilities**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Do not store with organic materials.

Store away from flammable substances.

Store away from reducing agents.

Store away from metals.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls/personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters**Components with limit values that require monitoring at the workplace:** Not required.**Additional information:** No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Granules
Color:	White
Odor:	Odorless
Odour threshold:	Not determined.

pH-value:	Not applicable.
------------------	-----------------

Change in condition

Melting point/Melting range:	251°C (484 °F) (dec)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
---------------------	----------------

Flammability (solid, gaseous)	Contact with combustible material may cause fire.
--------------------------------------	---

Ignition temperature:	Not determined
------------------------------	----------------

Decomposition temperature:	Not determined
-----------------------------------	----------------

Auto igniting:	Not determined.
-----------------------	-----------------

Danger of explosion:	An explosion was reported involving material being transfered with a metal instrument.
-----------------------------	--

Explosion limits:	
Lower:	Not determined

(Contd. on page 4)

- USA -

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 05/18/2009

Product name: Magnesium perchlorate

(Contd. of page 3)

Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20°C (68 °F):	2.21 g/cm ³ (18.442 lbs/gal)
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with Water at 25°C (77 °F):	993 g/l
Segregation coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information	No further relevant information available.

10 Stability and reactivity**Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Exothermic reaction with water

Reacts with various metals

Reacts with reducing agents

Reacts with flammable substances

Reacts with organic substances

Incompatible materials:

Reducing agents, easily oxidized materials

Metal powders

Organic materials

Hazardous decomposition products:

Phosgene

Hydrogen chloride (HCl)

Metal oxide fume

11 Toxicological information**Information on toxicological effects****Acute toxicity:****Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Perchlorates are irritating to the skin and mucous membranes.

Inhalation of magnesium compounds may cause metal fume fever. Metallic magnesium which perforates the skin may cause local lesions. Some magnesium salts have produced muscle weakness, cardiac arrhythmias, respiratory effects and changes in blood chemistry following ingestion.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information**Toxicity****Acquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Behavior in environmental systems:****Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Additional ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

(Contd. on page 5)

USA

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 05/18/2009

Product name: Magnesium perchlorate

(Contd. of page 4)

Do not allow material to be released to the environment without proper governmental permits.

Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.**13 Disposal considerations****Waste treatment methods****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****DOT regulations:**

Hazard class: 5.1
Identification number: UN1475
Packing group: II
Proper shipping name (technical name): MAGNESIUM PERCHLORATE
Label: 5.1

Land transport ADR/RID (cross-border)

ADR/RID class: 5.1 (02) Oxidizing substances
Danger code (Kemler): 50
UN-Number: 1475
Packaging group: II
UN proper shipping name: 1475 MAGNESIUM PERCHLORATE

Maritime transport IMDG:

IMDG Class: 5.1
UN Number: 1475
Label: 5.1
Packaging group: II
EMS Number: F-H, S-Q
Marine pollutant: No
Segregation groups: Perchlorates
Proper shipping name: MAGNESIUM PERCHLORATE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 5.1
UN/ID Number: 1475
Label: 5.1
Packaging group: II
Proper shipping name: MAGNESIUM PERCHLORATE

UN "Model Regulation": UN1475, MAGNESIUM PERCHLORATE, 5.1, II**Special precautions for user** Warning: Oxidizing substances

(Contd. on page 6)

USA

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 05/18/2009

Product name: Magnesium perchlorate

(Contd. of page 5)

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.
15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Product related hazard informations:

Hazard symbols:

Xi Irritant
O Oxidizing

Risk phrases:

8 Contact with combustible material may cause fire.
36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:

17 Keep away from combustible material.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
37 Wear suitable gloves.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

Information about limitation of use: For use only by technically qualified individuals.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact:

Zachariah C. Holt
Global EHS Manager

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)

USA